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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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JONG SUN HAN

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7590

09/08/2004

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EXAMINER

ABELSON, RONALD B

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/303,554

Applicant(s)

HAN, JONG SUN

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-16 and 18-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-16 and 18-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Claim Objections

1. Claim 12 objected to because of the following informalities: Line 7 "Wash" should be "Walsh".
Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-5, 8-16, 18-26, 28, 30, 32-37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Felix (US 5,946,356) in view applicant's admitted prior art 'AAPA', and further in view of Gilhousen (US 6,185,246).

Regarding independent claims 10, 12, 15, 21, 24, and 33, Felix teaches a method and apparatus for broadcasting at a base station (fig. 1 box 100) information of at least one or more code class in which Walsh codes assigned to mobile stations from the base station are classified

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depending on transmission rate (data rate, col. 4 lines 3-7), to a plurality of mobile stations (fig. 1 box 113, only one mobile shown) in its cell or sector (fig. 4 box 409, col. 3 lines 45-50, col. 3 line 66 - col. 4 line 7) on a paging channel or broadcast channel (paging channel, col. 3 line 66 - col. 4 line 7), wherein the call access control signal is broadcast prior to receipt of an access channel request. Regarding the limitation prior to receipt of an access channel request, at the time of the broadcast the remote is not actively communicating with the base station (fig. 4 box 401, col. 3 lines 45-47) and it is the base station that initiates the contact (col. 3 lines 56-61, col. 3 line 65 - col. 4 line 3).

Regarding claims 21 and 33, in addition to the limitations previously listed, repeatedly broadcasting, the broadcast occurs via a paging channel (col. 3 line 66 - col. 4 line 2).

Regarding claim 24, in addition to the limitations previously listed, Felix teaches receiving call access control information and accessing the base station using an

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available code class based on the received Walsh code and class state information (call is originated, col. 4 12-17).

Regarding claims 19, the second status indicates if a plurality of code classes is idle or busy (col. 4 lines 3-7). Note, Felix teaches the base station notifies the remotes of the Walsh Codes currently in use.

Felix is silent on broadcasting at a base station call access control signal including interference information of a reverse link, as specified in independent claims 10, 12, 15, 21, 24, and 33, and dependent claims 16, 22, 25, and 26; the interference information of the reverse link compares overall received power from the plurality of mobile stations in the cell or sector of the base station with a predefined threshold value, and then selectively indicates whether a current reverse channel is idle or busy (pg. 2 line 20 - pg. 3 line 5), as specified in claim 3; a link busy/idle field indicating whether or not interference of a reverse link transmitted to a mobile terminal from a base station exceeds a preset threshold value, as specified in claim 12; and transmitting the first or second status /

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interference information on a broadcast channel, as specified in claim 37.

AAPA teaches broadcasting at a base station call access control signal including interference information of a reverse link (idle/busy bit pg. 3 lines 6-18), as specified in claims 10, 15, 21, 24, and 33 and dependent claims 16, 22, 25, and 26; a link busy/idle field indicating whether or not interference of a reverse link transmitted to a mobile terminal from a base station exceeds a preset threshold value (idle/busy bit pg. 3 lines 6-18), as specified in claim 12; and transmitting the first or second status / interference information on a broadcast channel (pg. 3 lines 6-18), as specified in claim 37.

Therefore it would have been obvious to one of ordinary skill in the art, having both Felix and AAPA before him/her and with the teachings [a] as shown by Felix, a method and apparatus for broadcasting at a base station, and [b] as shown by AAPA, at a base station call access control signal including interference information of a reverse link, to be motivated to modify the system of Felix by having the base station broadcast to the mobiles the interference information of the reverse links. This

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modification can be performed in software. This would improve the system by informing the mobiles of the interference on the reverse links so that the mobiles may choose a link that has sufficiently low interference.

Regarding independent claims 10, 12, 15, 21, 24, and 33, and dependent claims 4, 11, 13, 18, and 22, although Felix teaches CDMA and variable data rates associated with the Walsh codes (col. 3 lines 30-32, col. 4 lines 3-7), the reference does not explicitly teach a plurality of Walsh code classes and indicating the availability of each class.

Gilhousen teaches a plurality of Walsh code classes, wherein the Walsh code length is chosen based upon the channel data rate (col. 3 lines 14-17, 23-27) and indicating the availability of each class (col. 12 lines 18-38), as specified in independent claims 10, 12, 15, 21, 24, and 33, and dependent claims 4, 11, 13, 18, 22.

Regarding independent claims 10 and 21, although Felix teaches CDMA and variable data rates associated with the Walsh codes (col. 3 lines 30-32, col. 4 lines 3-7), the reference does not explicitly teach a corresponding mobile station of the plurality of mobile stations uses a code

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class having a lower priority if a code class having a higher priority is busy during the access channel request, as specified in claim 10; nor the mobile station uses a next available priority code class that is available based on the code class information when requesting the call access, as specified in claim 21.

Gilhousen teaches a corresponding mobile station of the plurality of mobile stations uses a code class having a lower priority if a code class having a higher priority is busy during the access channel request (reassignment, codes of relatively shorter length to channels characterized by higher rates of data transmission, col. 19 lines 23-28), as specified in claim 10; and the mobile station uses a next available priority code class that is available based on the code class information when requesting the call access (reassignment, codes of relatively shorter length to channels characterized by higher rates of data transmission, col. 19 lines 23-28), as specified in claim 21. The examiner maintains that the higher rate traffic was originally assigned a lower priority code class because the higher priority code class was busy (col. 12 lines 29-34).

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Regarding independent claim 12, although Felix teaches CDMA and variable data rates associated with the Walsh codes (col. 3 lines 30-32, col. 4 lines 3-7), the reference does not explicitly teach the plurality of Walsh code classes are arranged in the code class busy/idle field from a lowest priority to a highest priority.

Gilhousen teaches the plurality of Walsh code classes are arranged in the code class busy/idle field from a lowest priority to a highest priority (col. 12 lines 18-38). Note, the list of codes is search for a code of suitable length (col. 12 lines 34-35). The examiner maintains the shorter the code length the higher the priority.

Regarding independent claims 15, 24, and 33, although Felix teaches CDMA and variable data rates associated with the Walsh codes (col. 3 lines 30-32, col. 4 lines 3-7), the reference does not explicitly teach the mobile terminal uses an available code class having a highest priority among all priority of code classes in the class availability information when requesting the call access.

Gilhousen teaches the mobile terminal uses an available code class having a highest priority among all

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priority of code classes in the class availability information when requesting the call access (Busy list searched for a chip length of appropriate for the data rate, col. 12 lines 29-34). Note, if a code in the highest priority class were available, then the mobile would be assigned that code. Note, the applicant is not stating that the highest data rate or shortest code is always chosen regardless of the data rate requirements of the mobile. The applicant is stating that the highest priority code that the mobile is allowed to use is chosen (spec: pg. 11 lines 15-23). As shown in the spec, the highest code class for mobile M1 is class 3. Referring to applicant's fig. 2, class 6 is the highest priority code class.

Regarding claims 5, 14, 20, 21, Felix does not teach a relative priority order for different code lengths.

Gilhousen teaches relative priority order for different code lengths (col. 12 lines 46-48). The examiner corresponds low data rate with low priority.

Regarding claims 8, 28, 30, 32, 35, Felix fails to teach, mobile station uses a code class having the highest priority of available code classes.

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Gilhousen teaches mobile station uses a code class having the highest priority of available code classes (list search for available code appropriate for the data rate of the requested channel, col. 12 lines 29 - 36). The examiner corresponds the applicant's highest priority with Gilhousen's available code appropriate for the data rate of the requested channel.

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Felix and AAPA and Gilhousen before him/her and with the teachings [a] as shown by the combination of Felix and AAPA, a method and apparatus for broadcasting at a base station, and [b] as shown by Gilhousen, a plurality of Walsh code classes, indicating the availability of each class, prioritizing the Walsh codes, choosing the best available Walsh code for the requesting mobile, the plurality of Walsh code classes are arranged in the code class busy/idle field from a lowest priority to a highest priority, the mobile terminal uses an available code class having a highest priority among all priority of code classes in the class availability information when requesting the call access, a relative priority order for

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different code lengths, and mobile station uses a code class having the highest priority of available code classes to be motivated to modify the system of the combination of Felix and AAPA by modifying the transceivers of Felix to allow for variable length Walsh codes and using the algorithm of Gilhousen to assign Walsh codes to the mobiles. This can be accomplished by assigning Walsh code lengths based on the data rate of the channel (Gilhousen: col. 3 lines 14-17, 23-27) and having the cell controller keep track of all the codes (Gilhousen: col. 12 lines 18-38). Then the base station would be able to broadcast to the mobile the state of each Walsh code class. This would improve the system by allowing for the selection of variable length Walsh codes and informing the mobile of the availability of each code class so the mobile may choose the optimal code class based upon the data to be transmitted and the code class availability.

Regarding claims 23 and 34, performing a call access request using an available code class based on the call access control information, Felix teaches the base station notifying the remote on call access control information / available Walsh codes (col. 4 lines 2-7).

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Regarding claim 36, the data frame structure is used for controlling call access of a terminal on a paging channel or broadcast channel in a communication system (Felix: col. 3 line 66 - col. 4 line 3).

Regarding claim 37, transmitting the first or second status / code information on a paging channel (Felix: col. 3 line 66 - col. 4 line 2).

4. Claims 6, 27, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Felix, AAPA, and Gilhousen as applied to claims 23, 10, 15, and 24 above, and further in view of Kamachi (US 5,678,181).

Felix is silent on call access information being broadcast through the broadcasting channel 'BCCH'.

AAPA teaches call access information being broadcast through the broadcasting channel 'BCCH' (AAPA: pg. 2 line 20 - pg. 3 line 5).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of

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Felix, AAPA, and Gilhousen and AAPA before him/her and with the teachings [a] as shown by the combination of Felix, AAPA, and Gilhousen, a method and apparatus for broadcasting at a base station, and [b] as shown by AAPA, call access information being broadcast through the broadcasting channel, to be motivated to modify the system of the combination of Felix, AAPA, and Gilhousen by broadcasting call access information via the BCCH. This would improve the system by providing a method of informing the mobiles of the state of the current radio channel capacity (AAPA: pg. 2 lines 22-25).

Although the combination of Felix, AAPA, and Gilhousen teaches call access information being broadcast through the broadcasting channel 'BCCH', the combination is silent on the period of transmission being a superframe period.

Kamachi teaches the BCCH channel is broadcast per superframe (fig. 2).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Felix, 'AAPA', and Gilhousen and Kamachi before him/her and with the teachings [a] as shown by the combination of Felix, 'AAPA', and Gilhousen, a method of controlling call

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access in a mobile communication system wherein call access information is transmitted through the BCCH channel, and [b] as shown by Kamachi, the BCCH channel is broadcast per superframe, to be motivated to modify the system of the combination of Felix, 'AAPA', and Gilhousen by transmitting call access information through a broadcasting channel BCCH on a superframe basis. This modification can be performed in software. This would improve the system by making the system compliant with conventional mobile radio systems (Kamachi: col. 5 lines 3-4).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Felix, 'AAPA', and Gilhousen as applied to claim 23 above, and further in view of Czaja (US 6,356,595).

Although Felix teaches call access information is transmitted through a paging channel (col. 3 line 66 - col. 4 line 2), the reference is silent on the period of transmission.

Czaja teaches transmitting on the paging channel per slot cycle period (fig. 1, col. 3 lines 61-63, 66-67).

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Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Felix, 'AAPA', and Gilhousen and Czaja before him/her and with the teachings [a] as shown by the combination of Felix, 'AAPA', and Gilhousen, a method of controlling call access in a mobile communication system wherein call access information is transmitted through the paging channel, and [b] as shown by Czaja, transmitting on the paging channel per slot cycle period, to be motivated to modify the system of the combination of Felix, 'AAPA', and Gilhousen by transmitting access information on the paging channel and assigning each mobile station one periodic paging channel slot. This would improve the system since the mobile is forced to only 'listen' during a known time period (Czaja: col. 3 line 67 - col. 4 line 2).

Response to Arguments

6. Applicant's arguments filed 6/10/2004 with respect to amended independent claim 10 have been fully considered but they are not persuasive. The examiner agrees with the applicant that Felix does not teach a mobile station of the plurality of mobile stations using a code class having a

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lower priority if a code class having a higher priority is busy during the access channel request (applicant: pg. 13 last full paragraph). However, the examiner maintains this presently added limitation is addressed in the office action with respect to Gilhousen.

The examiner disagrees with the applicant's assertion that Gilhousen does not teach the newly added limitation, "the corresponding mobile station using a code class having a lower priority if a code class having a higher priority is busy during an access channel request" (applicant: pg. 13 last paragraph). As shown in the office action, Gilhousen teaches choosing a code that is not busy of an appropriate code length (Gilhousen: col. 12 lines 29-36). Furthermore, Gilhousen teaches reassigning shorter length codes to channels with higher rates of data transmission (reassignment, codes of relatively shorter length to channels characterized by higher rates of data transmission, col. 19 lines 23-28). Therefore, the examiner maintains that the higher rate traffic was originally assigned a lower priority code because at the time of assignment all the higher priority / shorter length codes were occupied.

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Regarding applicant's contention that AAPA (applicant: pg. 14 lines 5-6), Kamachi (applicant: pg. 14 lines 7-10), and Czaja (applicant: pg. 14 lines 7-10) do not teach the newly added limitation, "the corresponding mobile station using a code class having a lower priority if a code class having a higher priority is busy during an access channel request", as shown above, this limitation has been addressed with respect to Gilhousen.

Prior Art of Record

7. Park (US 6,728,233) teaches assigning lower rate Walsh codes when higher rate codes are not available.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to

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Ronald Abelson whose telephone number is (571) 272-3165.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RU

Ronald Abelson
Examiner
Art Unit 2666

9/3/04

Seema S. Rao

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